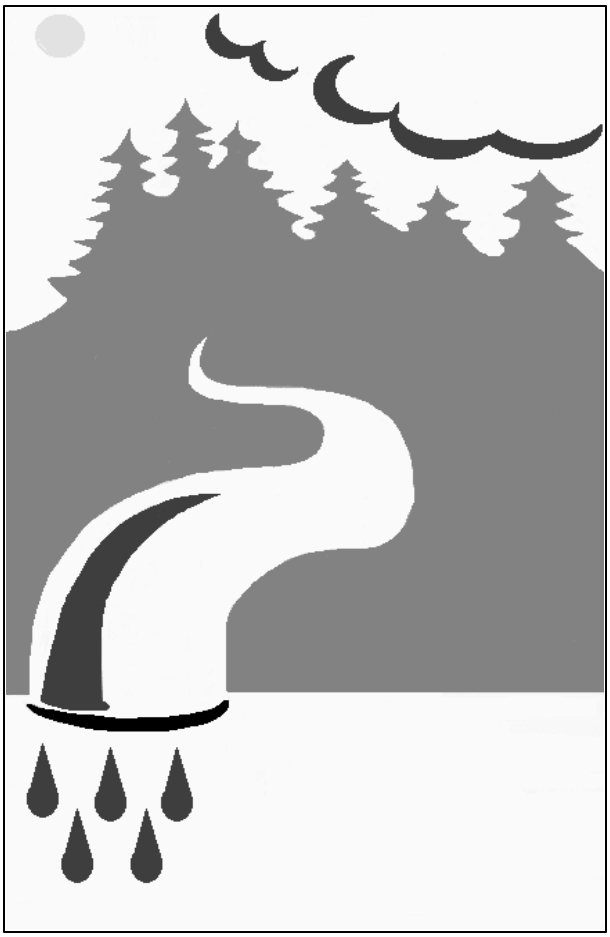
BUREAU OF WATER

South Carolina Department of Health and Environmental Control

Source Water Assessment

Water System: **Town Of Batesburg-Leesville**
System No 3210002
Lexington County

Water Source: Surface Water:
S32104, S32105



April 29, 2003

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South Carolina Department of Health and Environmental Control

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SUMMARY

This report contains the completed groundwater susceptibility assessment for the Town Of Batesburg-Leesville, System No. 3210002. The system includes public supply intakes: S32104, S32105. The system is located in Lexington, South Carolina and serves a primary population of 6359. The system is located in the Saluda-Edisto Basin(s). Of the 59 potential contaminant sources (PCSs) in this initial inventory 44 PCSs had more than one category of contaminants. The inventory includes 24 PCSs with volatile organic compounds (VOCs), 30 PCSs with petroleum products, 23 PCSs with metals, 20 PCSs with nitrates, 20 PCSs with pesticides/herbicids, 16 PCSs with pathogens, no PCSs with radionuclides, and no PCSs with undetermined contaminants. The susceptibility analysis determined 13 PCSs with a high susceptibility ranking, 37 PCSs with a moderate susceptibility ranking, and 9 PCSs with low susceptibility ranking.

INTRODUCTION

The 1996 Amendments to the Safe Drinking Water Act required the States to develop Source Water Assessment and Protection Programs (U.S. Environmental Protection Agency, 1996). The program's goal is to provide added protection of both groundwater and surface water drinking water sources by conducting source water assessments and implementing protection measures. To meet this goal, SCDHEC is serving as the coordinating agency for the State's Source Water Assessment and Protection Program (SWAP) and has conducted assessments of the source water for all federally defined drinking water supply systems. A more detailed description of the program can be found in a Bureau of Water publication, *A Guide to Source Water Protection* (September 2002).

This report contains the completed assessment for the Town Of Batesburg-Leesville System No. 3210002 that includes surface water intakes(s): S32104, S32105. Site-specific information for each susceptibility assessment was obtained from: SCDHEC files, site inspections, and published reports on determinations of primary and secondary source water protection areas (Lanier and Falls, 1999; Caldwell, 2000). A copy of this assessment report can be obtained by contacting the Bureau of Water in Columbia, South Carolina at (803) 898-4300 or on the web at http://www.scdhec.net/water.

WATER INTAKE INTEGRITY AND VULNERABILITY

Sanitary surveys of public water supply systems are conducted periodically. Part of that inspection includes the evaluation of the physical integrity of the intake structure and identification of any potential threats to the intake. To get more information about the latest sanitary survey for this system, call the Drinking & Recreational Waters Compliance Section at (803) 898-3543.

DESCRIPTION OF SYSTEM AND SOURCE

The Town Of Batesburg-Leesville water system is located in Lexington County, South Carolina. The drinking water sources for the system are surface water intakes:

S32104 - Lightwood Knot Creek
S32105 - Duncan Creek

The system is located within the Saluda-Edisto Basin(s). The system serves a primary population of 6359.

WATER QUALITY WITHIN THE SWPA

The Department of Health and Environmental Control promulgates water quality standards for South Carolina and maintains an extensive surface water quality monitoring network of over 500 stations. Streams, lakes, and other water-bodies that do not meet the standards are designated impaired and are required by the Clean Water Act to be listed as such (the 303d list). No impaired waters on the 303d list are included within the source water protection area for this system. See Appendix A for details and a list of impaired waters within this system's source water protection area.

DELINEATION OF SOURCE WATER PROTECTION AREAS

A 24-hour travel distance is used to determine the upstream limit of source water protection areas for surface water intakes in very large basins. If the entire drainage basin consists of only one Hydrologic Unit Code, then a time-of travel was not calculated. Source Water Protection Areas (SWPA's) for surface waters are subdivided into three zones of relative susceptibility of the intake to potential contamination sources: Zone 1, Zone 2, Zone 3.

Zone 1 represents the area may contribute contamination from overland flow or from contaminants in groundwater. Zone 1 is established from either the edge of the stream or from the edge of the flood plain to the 24-hour time of travel point upstream from the intake. For streams in the Piedmont and Upper Coastal Plain, Zone 1 is defined as a 200 foot buffer from the edge of the stream. For streams in the Lower Coastal Plain (where wide floodplains and/or braided streams occur), 200 foot buffer of Zone 1 is defined from the edge of the flood plain. The 200 foot Zone 1 is also applied from the edge of reservoirs.

Zone 2 is established as a zone of concern, based on proximity to the surface water and associated travel time of potential contaminants. However, it is an area of relatively less concern than the very rapid overland flow and groundwater discharge typical of Zone 1. The primary mechanism for transport of contaminants within Zone 2 is groundwater flow. Contaminant transport modeling of two common contaminants found in groundwater (gasoline and trichloroethylene) indicated that these contaminants would reasonably attenuate to below maximum contaminant levels (MCLs) within 1500 feet. Therefore, a buffer of 1500 feet is used to define Zone 2 of the SWPA to the 24-hour time-of-travel point upstream from the intake.

Zone 3 is the remainder of the 14-digit hydrologic unit code (HUC) drainage basin between the edge of the basin and the1500 foot buffer of Zone 2 and the rest of the basin beyond the 24-hour time-of-travel point upstream from the intake.

POTENTIAL CONTAMINANTS OF INTEREST AND THE INVENTORY OF POTENTIAL CONTAMINANT SOURCES

Eight categories of potential contaminants of interest were considered by the SCDHEC for susceptibility analysis. These eight categories include: volatile organic compounds (VOCs), petroleum products, metals, nitrates, pesticides/herbicides, pathogens, radionuclides, and undetermined.

Potential contaminant sources (PCSs) are defined by land-use or site-specific activities that could potentially release contaminants of interest within the SWPA. Examples of PCSs include gas stations, dry cleaners, agricultural areas, automobile repair shops, landfills, septic systems, and manufacturers, businesses, and facilities where potential contaminants of interest are used or stored.

The SCDHEC identified an initial inventory of the potential contaminants of interest at 59 PCSs in the SWPAs for System No. 3210002 (Appendix B). The inventory and location of each PCS was obtained from the SCDHEC databases and site inspections. The inventory was added to a GIS database and plotted relative to the SWPA around each intake (Figures.).

SUSCEPTIBILITY ANALYSIS

A susceptibility matrix is used to rank the susceptibility of source water to a potential contaminant source within a SWPA (Table 1.). The matrix assigns a ranking of high, moderate or low susceptibility to each PCS on the basis of location the contaminant of interest with respect to the intake and surface water body.

Of the 59 PCSs identified in the initial inventory, 44 PCSs had more than one category of contaminant. System No. 3210002 had 24 PCSs with VOCs, 30 PCSs with petroleum products, 23 PCSs with metals, 20 PCSs with nitrates, 20 PCSs with pesticides/herbicides, 16 PCSs with pathogens, no PCSs with radionuclides, and no PCSs with undetermined (Appendix B). System No. 3210002 had 13 PCSs with a high susceptibility ranking, 37 PCSs with a moderate susceptibility ranking, and 9 PCSs with a low susceptibility ranking (Appendix C).

LOCAL PROTECTION PLANS

The information provided in this report is intended to be the foundation of a local effort to provide better protection of our state's sources of drinking water. The initial inventory of PCSs and potential contaminants of interest presented in this report should be verified by the owners and managers of System No. 3210002 for accuracy and annually updated to reflect changes in land-use and site-specific activities within the SWPA.

SELECTED REFERENCES

- Caldwell, A.W., 2000, Determination of the Primary and Secondary Source-Water Protection Areas for Selected Surface-Water Public-Supply Systems in South Carolina: U.S. Geological Survey Water-Resources Investigations Report 00-4097.

- Lanier, T.H. and Falls, W.F., Methods for Segmentation of Source-Water Protection Areas and Susceptibility Assessment to Contamination for Public Surface Water Systems, and Their Application to an Intake, Aiken, South Carolina: Proceedings of the 1999 Georgia Water Resources Conference, 1999, pp.97-101.

Table 1. Surface Water Susceptibility Matrix			
Type of Contaminant	**Zone 1**	**Zone 2**	**Zone 3**
VOC's	HS	HS	MS
Petroleum	HS	MS	LS
Metals	HS	MS	LS
Nitrates	HS	MS	LS
Pesticides/Herbicides	HS	HS	MS
Pathogens	HS	HS	MS
Radionuclides	HS	HS	MS
Unknown	HS	HS	MS

HS = High Susceptibility
MS = Moderate Susceptibility
LS = Low Susceptibility

Figures – Source Water Protection Area(s) and Location of Potential Contaminant Sources for Town Of Batesburg-Leesville, System No 3210002, Intakes S32104, S32105,

APPENDIX A
303d List Waters within the SWPA for Town Of Batesburg-Leesville, System No 3210002

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APPENDIX B

Inventory of Potential Contaminants of Interest for each Potential Contaminant Source for Town Of Batesburg-Leesville, System No 3210002

APPENDIX C
Potential Contaminant Source Susceptibility
Analysis for TOWN OF BATESBURG-LEESVILLE, System No 3210002